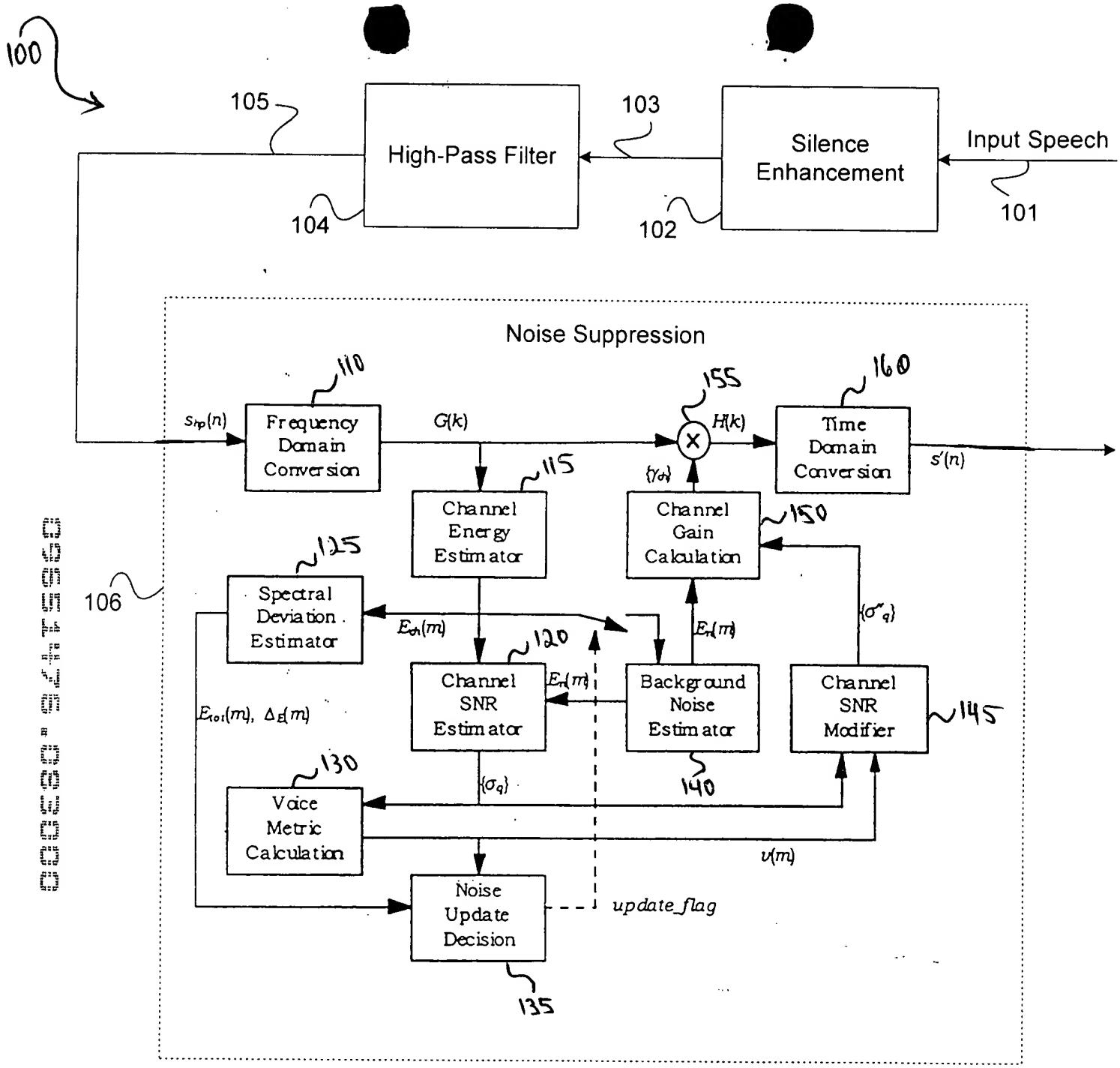

FIG. 1a
(PRIOR ART)

```
/* Normal update logic */
update_flag = FALSE
if ( v(m) ≤ UPDATE_THLD ) {
    update_flag = TRUE
    update_cnt = 0
}

/* Forced update logic */
else if (( E_ω(m) > NOISE_FLOOR_DB ) and ( Δ_E(m) < DEV_THLD )) {
    update_cnt = update_cnt + 1
    if ( update_cnt ≥ UPDATE_CNT_THLD )
        update_flag = TRUE
}

/* "Hysteresis" logic to prevent long-term creeping of update_cnt */
if ( update_cnt == last_update_cnt )
    hyster_cnt = hyster_cnt + 1
else
    hyster_cnt = 0
last_update_cnt = update_cnt
if ( hyster_cnt > HYSTER_CNT_THLD )
    update_cnt = 0
```

FIG. 1b
(PRIOR ART)

/* Set or reset modify flag */
index_cnt = 0
for ($i = N_M$ to N_c - 1 step 1) {
    if ($\sigma_q(i) \geq$ INDEX_THLD)
        index_cnt = *index_cnt* + 1
}
if (*index_cnt* < INDEX_CNT_THLD)
    modify_flag = TRUE
else
    modify_flag = FALSE

/* Modify the SNR indices to get $\{\sigma'_q\}$ */
if (*modify_flag* == TRUE)
    for (i = 0 to N_c - 1 step 1)
        if (($v(m) \leq$ METRIC_THLD) or ($\sigma_q(i) \leq$ SETBACK_THLD))
            $\sigma'_q(i) = 1$
        else
            $\sigma'_q(i) = \sigma_q(i)$
else
    $\{\sigma'_q\} = \{\sigma_q\}$

/* Limit $\{\sigma''_q\}$ to SNR threshold σ_{th} */
for (i = 0 to N_c - 1 step 1)
    if ($\sigma'_q(i) < \sigma_{th}$)
        $\sigma''_q(i) = \sigma_{th}$
    else
        $\sigma''_q(i) = \sigma'_q(i)$

FIG. 1c
(PRIOR ART)

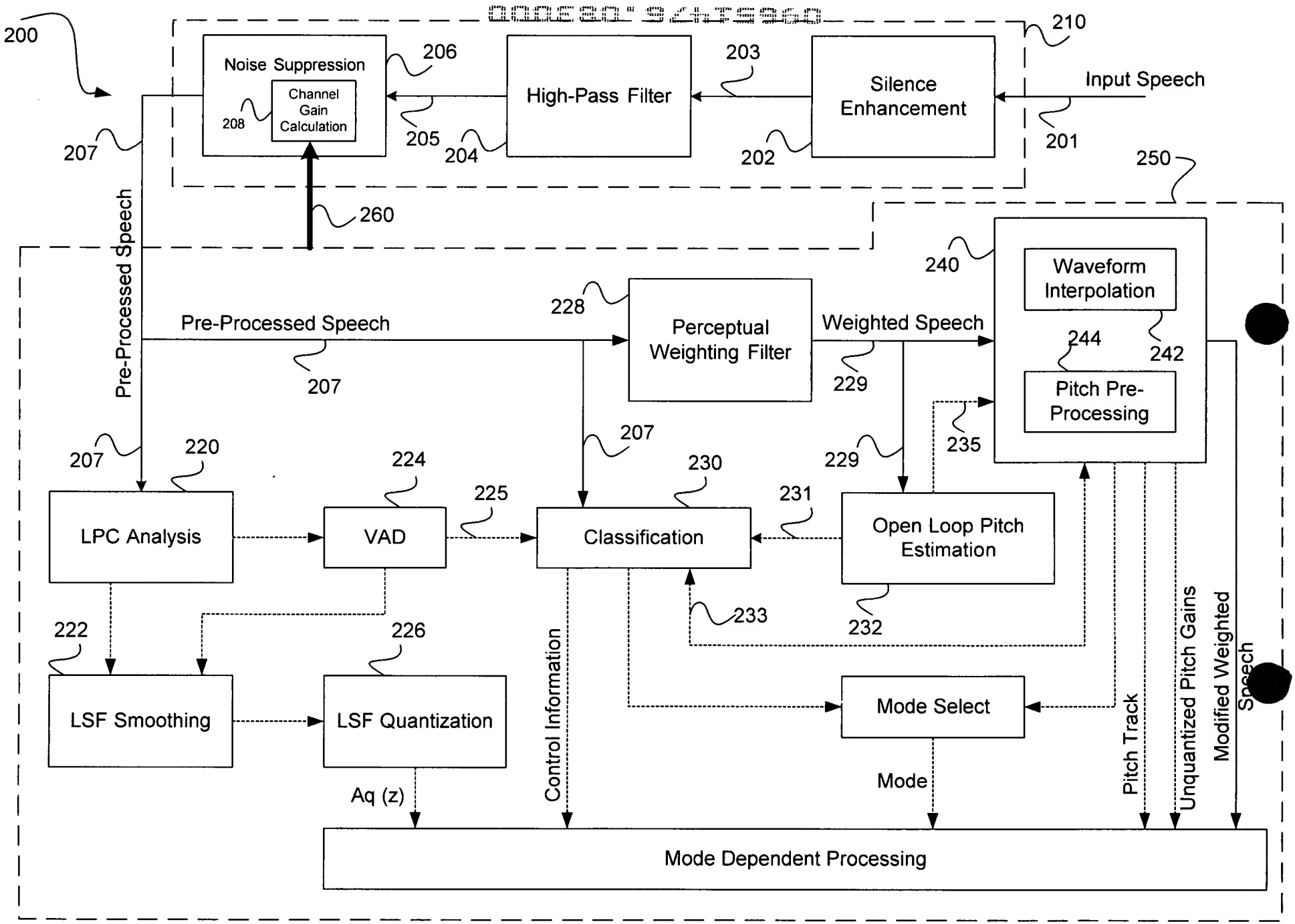
200
210
Noise Suppression
206
Channel Gain Calculation
208
High-Pass Filter
203
Silence Enhancement
Input Speech
207
205
204
202
201
250
260
Pre-Processed Speech
240
Waveform Interpolation
228
Perceptual Weighting Filter
Weighted Speech
Pre-Processed Speech
207
229
244
242
Pitch Pre-Processing
235
207
220
224
230
231
229
LPC Analysis
VAD
225
Classification
Open Loop Pitch Estimation
233
232
222
226
LSF Smoothing
LSF Quantization
Control Information
Mode Select
Pitch Track
Unquantized Pitch Gains
Modified Weighted Speech
Mode
Aq (z)
Mode Dependent Processing

Figure 2

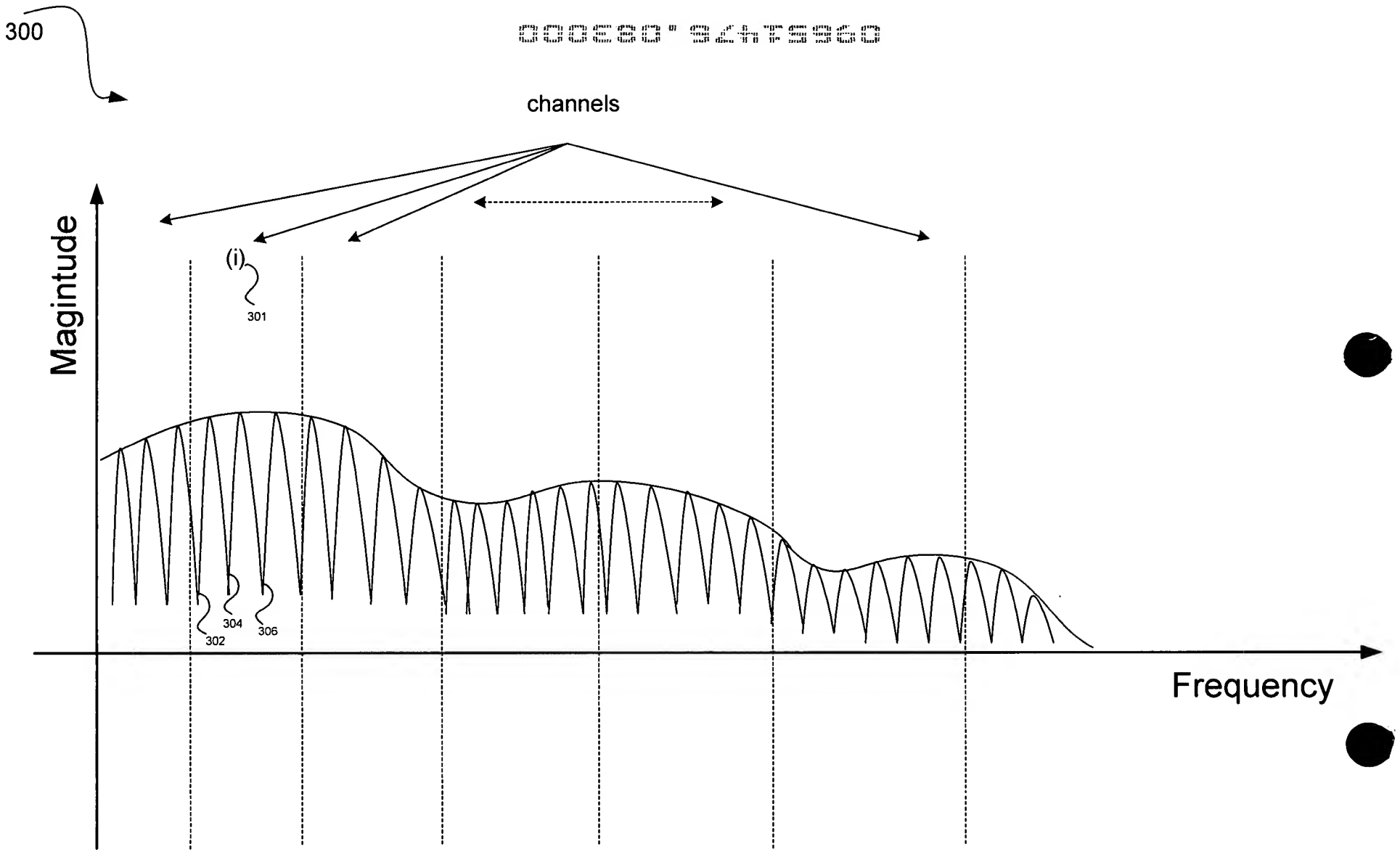

Figure 3

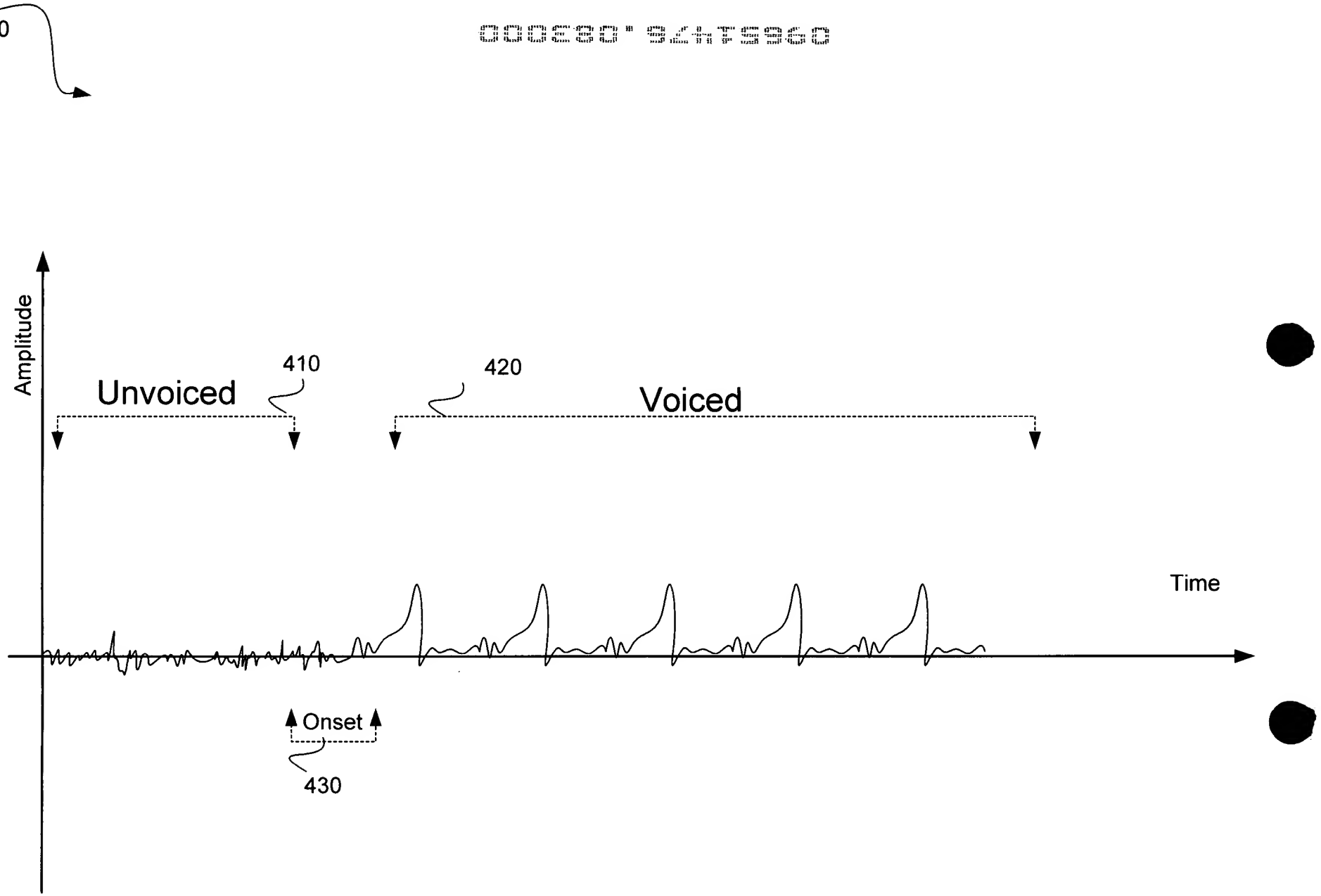

Figure 4